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| 10/734,803 | 12/12/2003 | Joseph Carmine Centanni | Centanni 2-32-9-22-5-7 (L) | 3519 |
| 46363 | 7590 | 03/29/2011 | EXAMINER | |
| CURS, NATHAN M | | | | |
| WALL & TONG, LLP/ ALCATEL-LUCENT USA INC. 25 James Way Eatontown, NJ 07724 | | | ART UNIT | |
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The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOSEPH CARMINE CENTANNI,
ANDREW ROMAN CHRAPLYVY, ALAN H. GNAUCK,
ROBERT MEACHEM JOPSON, COLIN J. McKINSTRIE,
and STOJAN RADIC

Appeal 2009-010352
Application 10/734,803
Technology Center 2600

Before MAHSHID D. SAADAT, ROBERT E. NAPPI,
and MARC S. HOFF, *Administrative Patent Judges*.

SAADAT, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from the rejection of claims 1, 2, 4, 8-10, and 14-20. Claims 22 and 23 have been canceled, claims 3, 5-7, 11-13, and 21 have been objected to, and claim 24 has been allowed. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

STATEMENT OF THE CASE

Appellants' invention relates to method and apparatus for multiband optical switching, wherein an optical pump signal from at least two optical pump sources is receives and a signal from each of the at least two optical pump sources and an input data signal in combined to produce a combined signal (Spec. 3:19-24).

Exemplary Claim

Claim 1 is illustrative of the invention and reads as follows:

1. An optical switch, comprising:
 - a first optical combiner for combining at least two optical pump signals to produce a combined pump signal, and a second optical combiner for combining an input data signal with the combined pump signal to produce a combined signal;
 - a non-linear optical element for imparting a non-linear effect on the combined signal to generate a number of optical bands based on a simultaneous three-signal interaction of the at least two optical pump signals and the input data signal; and
 - at least one optical splitter for separating the combined signal from said non-linear optical element into respective generated optical bands;
- wherein at least one of said at least two optical pump signals is controllably modulated such that a logic sequence of said input data signal is controllably switched.

The Examiner's Rejection

The Examiner relies on the following prior art in rejecting the claims:

| | | |
|----------|--------------------|---------------|
| Cearns | US 5,943,149 | Aug. 24, 1999 |
| Takeda | US 6,424,774 B1 | Jul. 23, 2002 |
| Bjarklev | US 2004/0100681 A1 | May 27, 2004 |

Claims 1, 2, 4, 8-10, and 14-20 stand rejected under 35 U.S.C.

§ 103(a) as being unpatentable over Takeda, Bjarklev, and Cearns.

ISSUE

Did the Examiner err in rejecting the claims under 35 U.S.C.

§ 103(a)? The issue specifically turns on whether the combination of references teaches or suggests that “at least one of said at least two optical pump signals is controllably modulated such that a logic sequence of said input data signal is controllably switched,” as recited in claim 1.

ANALYSIS

Appellants argue that the selector 27 of Takeda, which the Examiner characterized as the element for controllably modulating the two optical pump signals, selects between the pump signals from the pump sources 22-1 and 22-2, instead of controllably modulating at least one of the two pump signals (App. Br. 12). Additionally, Appellants point out that, even if the disclosure of Takeda can be taken to mean that the two pump signals are modulated, the reference fails to teach or suggest controllably switching a logic sequence of the input data signal as a result of the modulation (App. Br. 14). Appellants further argue that the combination of a third pump signal of Bjarklev with Takeda is improper since Takeda selects between pump signals such that only one signal is applied at a time (*id.*).

In response, the Examiner provided detailed explanation as to how the selector of Takeda would be recognized as an optical modulation type known as on-off keying modulation (Ans. 9-10), to which Appellants did not provide any rebuttal in the Reply Brief. With respect to the combination of references, the Examiner argues that Takeda does not simultaneously select both pump signals, but rather alternates between opposing states and couples an additional wavelength taught by Bjarklev with the selected pump wavelength (Ans. 11).

We agree with Appellants (Reply Br. 3) that the relied-on portion of Bjarklev provides no teaching or suggestion related to applying a pump signal to another pump signal. In fact, Bjarklev, in paragraph [0002], explains that two pumps are needed to ensure polarization insensitive operation in a FWM converter where the output wavelength depends on both the pump and the input signal wavelengths. Based on this general reference to using two pumps, we find that the Examiner has not clearly explained how the two pump signals should be combined in order to couple an additional pump signal with the selected pump signal that is passed through the selector of Takeda.

CONCLUSION

On the record before us, we find that the Examiner erred in rejecting claim 1, as well as claim 18 which recites similar limitations to those discussed above. Therefore, the 35 U.S.C. § 103 rejection of claims 1 and 18, and of claims 2, 4, 8-10, 14-17, 19, and 20 dependent therefrom, cannot be sustained.

DECISION

The decision of the Examiner rejecting claims 1, 2, 4, 8-10, and 14-20 is reversed.

REVERSED

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